Amendments to Claims

1. (Currently amended) An apparatus for repairing a defect in an annulus comprising a plug having:
a biodegradable member having an outer surface and a bore;
a growth promoting matrix disposed in the biodegradable member; and
at least one retaining member on the outer surface of the biodegradable member
said biodegradable member being configured such that upon insertion of the biodegradable member into the defect the defect is sealed and further such that use of the biodegradable member containing growth promoting matrix reduces or eliminates further degeneration of the annulus.

2. (Original) The apparatus of claim 1, wherein the biodegradable member further comprises a cap at an end.

3. (Original) The apparatus of claim 1, wherein the biodegradable member further comprises a cap at an end, the cap having a slot therein for mating with a tool.

4. (Original) The apparatus of claim 1, wherein the biodegradable member is made from a polymer.

5. (Original) The apparatus of claim 1, wherein the biodegradable member is made from a polymer selected from the group consisting of poly(L-lactides) (PLLA), poly(lactide-co-glycolides) (PLGA), polylactides (PLA), polyglycolic acids (PGA), polycaprolactones (PCL), polycarbonates, polyamides, polyanhydrides, polyamino acids, polyortho esters, polyacetals, polycyanoacrylates, degradable polyurethanes, albumin, collagen, elastin, reticulin, synthetic polyamino acids, prolamines, polysaccharides, alginate, heparin, biodegradable polymers of sugar units, and combinations thereof.

6. (Original) The apparatus of claim 1, wherein the growth promoting matrix includes a growth promoting compound.

7. (Original) The apparatus of claim 1, wherein the growth promoting matrix includes a growth promoting compound selected from the group consisting of growth factors, angiogenic factors, immune system suppressors, anti-inflammatory agents, antibiotics, living cells, cell-binding proteins and peptides, and combinations thereof.

8. (Currently amended) The apparatus of claim 1, wherein the growth promoting matrix includes a growth factor selected from the group consisting of TGF-ß1, TGF-ß2, and TGF-ß3, GDF-5, BMPs and ~~GFin~~the proteins described in U.S. Patent No. 5,290,763.

9. (Original) The apparatus of claim 1, wherein the at least one retaining member includes at least one retaining ridge.

10. (Original) The apparatus of claim 1, wherein the biodegradable hollow member includes at least one aperture providing communication between the outer surface and the bore.

11. (Original) An apparatus for repairing a defect in an annulus comprising a plug having:
a biodegradable member having an outer surface and a bore;
a growth promoting matrix disposed in the bore;
a cap at an end of the biodegradable member;
at least one aperture connecting the outer surface of the biodegradable member to the growth promoting matrix disposed in the bore; and
at least one retaining member on the outer surface of the biodegradable member.

12. (Original) The apparatus of claim 11, wherein the growth promoting matrix is chondro-inductive.

13. (Original) The apparatus of claim 11, wherein the cap has a slot therein for mating with a tool.

14. (Original) The apparatus of claim 11, wherein the biodegradable member is made from a polymer.

15. (Original) The apparatus of claim 11, wherein the biodegradable member is made from a polymer selected from the group consisting of poly(L-lactides) (PLLA), poly(lactide-co-glycolides) (PLGA), polylactides (PLA), polyglycolic acids (PGA), polycaprolactones (PCL), polycarbonates, polyamides, polyanhydrides, polyamino acids, polyortho esters, polyacetals, polycyanoacrylates, degradable polyurethanes, albumin, collagen, elastin, reticulin, synthetic polyamino acids, prolamines, polysaccharides, alginate, heparin, biodegradable polymers of sugar units, and combinations thereof.

16. (Original) The apparatus of claim 11, wherein the matrix comprises a growth promoting compound.

17. (Original) The apparatus of claim 12, wherein the matrix comprises a growth promoting compound selected from the group consisting of growth factors, angiogenic factors, immune system suppressors, anti-inflammatory agents, antibiotics, living cells, cell-binding proteins and peptides, and combinations thereof.

18. (Original) The apparatus of claim 11, wherein the at least one retaining member includes at least one retaining ridge.

19. (Currently amended) A method of sealing a defect in an annulus of a human intervertebral disc comprising:
providing a plug comprising a biodegradable member having an outer surface, a growth promoting matrix, and at least one retaining member on the outer surface; and
inserting the plug into the defect of the annulus of an intervertebral disc such that upon insertion of the biodegradable member into the defect the defect is sealed and further such that use of the biodegradable member containing growth promoting matrix reduces or eliminates further degeneration of the annulus.

20. (Original) The method of claim 19, wherein the biodegradable member has a first end and a second end.

21. (Original) The method of claim 19, wherein the growth promoting matrix comprises a growth promoting compound selected from the group consisting of growth factors, angiogenic factors, immune system suppressors, anti-inflammatory agents, antibiotics, living cells, cell-binding proteins and peptides, and combinations thereof.

22. (Original) The method of claim 19, wherein the biodegradable member has a sealing member at one end.

23. (Original) The method of claim 19, wherein the biodegradable member further comprises a cap at an end.

24. (Original) The method of claim 19, wherein the biodegradable member further comprises a cap at an end, and the cap has a slot therein for mating with a tool.

25. (Original) The method of claim 19, wherein the biodegradable member comprises a polymer.

26. (Original) The method of claim 19, wherein the biodegradable member is made from a polymer selected from the group consisting of poly(L-lactides) (PLLA), poly(lactide-co-glycolides) (PLGA), polylactides (PLA), polyglycolic acids (PGA), polycaprolactones (PCL), polycarbonates, polyamides, polyanhydrides, polyamino acids, polyortho esters, polyacetals, polycyanoacrylates, degradable polyurethanes, albumin, collagen, elastin, reticulin, synthetic polyamino acids, prolamines, polysaccharides, alginate, heparin, biodegradable polymers of sugar units, and combinations thereof.

27. (Original) The method of claim 19, wherein the biodegradable matrix is chondro-inductive .

28. (Original) The method of claim 19, wherein the matrix comprises a growth promoting compound selected from the group consisting of growth factors, angiogenic factors, immune system suppressors, anti-inflammatory agents, antibiotics, living cells, cell-binding proteins and peptides, and combinations thereof.

29. (Original) The method of claim 19, wherein the at least one retaining member comprises at least one retaining ridge.

30. (Original) The method of claim 19, wherein the biodegradable member comprises at least one aperture extending there-through to the growth promoting matrix.

31. (Original) The method of claim 19, whereby inserting the plug includes inserting, rotating, screwing, threading, or tapping the plug as to place the plug within the defect.

32. (Original) The method of claim 19, wherein inserting the plug is done using a tool.

33. (Currently Amended) The method of sealing a defect of claim 32, wherein the tool is selected from the group consisting of a hemostat, a catheter, pliers, a slotted screwdriver, a ~~Phillips shaped~~ cross head screwdriver, a hex shaped screwdriver, and a hammer.

34. (New) The apparatus of claim 1 wherein use of the apparatus avoids fusion of the vertebrae adjacent to the defective annulus.

35. (New) The apparatus of claim 1 wherein the biodegradable member is configured conform to the size and shape of the defect.

36. (New) The method of claim 19 wherein use of the plug avoids fusion of the vertebrae adjacent to the defective annulus.

37. (New) The method of claim 19 wherein the plug is configured conform to the size and shape of the defect.